1 General Overview

This is a Service Level Agreement (“SLA”) between ________________________ and Data Center Colocation to document:

- The technology services Data Center Colocation provides to the customer
- The targets for response times, service availability, and maintenance associated with these services
- The responsibilities of Data Center Colocation as a provider for subscription-based services, hourly services or specific services
- Processes for requesting services
- Review and Reporting SLA process

This SLA will be reviewed annually to assess hardware, software and procedural accuracy.

2 Service Description

2.1 Service Scope

IST provides colocation services in the campus Data Center at 2195 Hearst in Berkeley. The service provides customers with a secure location and network connectivity in a hardened facility for housing mission-critical servers and related equipment. The facility is connected to the campus backbone network via two separate 10-Gigabit trunks for high availability. Customers are provided rack space in lockable cabinets with dual power connections, backup UPS, remote management access for servers, hardware installation assistance, and a staffed Data Center Operations Desk.

The colocation service includes:

- Equipment rack space which are 42 Rack Units (Height), 36” deep lockable cabinets (Customer-provided racks will be considered on a case-by-case basis).
- Electrical connectivity with dual 120V/20A (3 phase) power connections (power can be modified to suit at customer’s expense).
- Centralized UPS and generator will provide continuous power in the event that commercial power fails.
- Hardware installation assistance.
- Use of Data Center network infrastructure (redundant gigabit Ethernet to campus backbone).
- Intrusion Detection Systems deployed at the campus network border to the Internet.
- Remote management access.
- Physical security and access control (entry is card-key controlled and restricted to pre-authorized users who have undergone police background checks).
- Staffed Operations Desk (see IST Service Desk Hours).
- Automated 24x7 monitoring for environments and security.
- Use of facility loading dock, freight elevator, and crash carts.

For more information, please visit the IST Service Catalog at http://ist.berkeley.edu/services/is/dc/colo.

2.2 Assumptions

- Services provided by Data Center Colocation are clearly documented in the IST Service Catalog - http://ist.berkeley.edu/services/catalog.
- All Subscription Services are provided on a recharge basis.
At the discretion of the Data Center Colocation, any services provided outside of scope of this Service Level Agreement are subject to an additional cost.

Major upgrades including Data Center Administration consulting for services outside of the scope of this Service Level Agreement are treated as hourly projects and billed at the Data Center Colocation service hourly rate.

Changes to services will be communicated and documented via the change notification process.

Service will be provided in adherence to any related policies, processes and procedures.

Scheduling of all service-related requests will be conducted in accordance with the Data Center Colocation Service Level Agreement.

Data Center Colocation Services and IST will not provide system management, application, operating system, or database support for customer equipment.

Data Center Colocation Services and IST will not monitor server or equipment logs.

Data Center Colocation Services and IST will not be held liable in the event that a customer's server is compromised or experiences a security incident.

In the event of a disaster or if the Data Center is not accessible, colocation racks will be restored in priority order per the Emergency Operations Center direction.

3 Roles and Responsibilities

3.1 Parties

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<thead>
<tr>
<th>Parties</th>
<th>Name</th>
<th>Contact Information</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Center Colocation, IST-Infrastructure Services</td>
<td>Steve Aguirre, Manager, Campus Data Center</td>
<td><a href="mailto:sagueirre@berkeley.edu">sagueirre@berkeley.edu</a></td>
<td>510-642-5378</td>
</tr>
<tr>
<td>Customer Technical Contact</td>
<td></td>
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<tr>
<td>Customer Billing Contact</td>
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</table>

3.2 Data Center Colocation Responsibilities

Data Center Colocation responsibilities and/or requirements in support of this Agreement include:

- Appropriate notification to Customer for all scheduled maintenance via the IST System Status Page - (http://systemstatus.berkeley.edu).
- Data Center Colocation group will implement defined processes to deliver these service levels.
- In the event of power or unanticipated network issues, IST will notify Customers within 2 hours of event occurrence.
- IST provides 24x7 automated monitoring of environments and physical security.
- IST provides a staffed IST Service Desk (see Hours of Coverage).
- IST provides redundant power, UPS, and generator backup.
- IST provides secure building access; entry is card-key controlled, and restricted to pre-authorized users who have undergone police background checks.
- IST provisions server racks in lockable cabinets.
- IST will work with customer to help rack, cable, and label equipment.
- IST will, in limited situations, reboot servers based on customer request.
- Meet response times associated with the priority assigned to incidents and service requests.
- Review Service Level Agreement annually and notify customer of updates or changes.
3.2.1 Network Connectivity

- IST provides network connections for equipment and IP addresses as required. IST is responsible for ensuring network connection to campus backbone (and Internet).

- Network demarcation: IST manages and will troubleshoot all network equipment from the campus border.

- IST manages the router up to the patch panel connection in the Data Center rack to which the customer's equipment is attached. This includes the IST-supplied cable connected to the patch panel and used to plug into the customer's equipment.

- The Customer is responsible for managing and troubleshooting all user-installed servers and equipment (i.e., end devices).

- IST provides out-of-band remote management access (via KVM or serial console) for servers located in the Data Center.

3.2.2 Network Security

- UCB provides a Minimum Security Standards guideline for all campus networked devices. Included in this guideline are the requirements to maintain host-based firewall software, to use anti-virus software, and to keep current with server software patches. All colocation customers must adhere to these Standards. The guideline can be found at http://security.berkeley.edu/MinStds/index.html.

- The IST-provisioned firewall is a hardware blade that is integrated on the Cisco switch(es) and is highly available by providing redundancy across switches. IST will maintain hardware, OS upgrades and patches for the firewall.

- Customers requiring fewer than 4 IP addresses will be placed on a shared colocation subnet. IST manages the configuration rule sets for firewalls on the shared subnets.

- Network connections may be placed on the "hidden" VLAN for the customer's subnet, accessible via the firewall, or on the "public" VLAN, outside the firewall at the customer's request. Customers must meet the host-based firewall requirements in the Campus Minimum Security Standards.

- Customers requiring more than 3 IP addresses will be placed on a separate subnet. Customers who require a hardware firewall must use the IST Firewall service with IST provided equipment. It is the customer's responsibility to ensure compliance with all relevant policies and guidelines.

- IST provides intrusion detection at the campus border. Internal traffic is not monitored. However, IST Security scans the campus network for potential threats and will alert departmental security contacts for corrective action. See http://security.berkeley.edu.

- IST reserves the right to block any server that it believes poses a serious threat to campus computing resources or the Internet. This may involve a compromised host or one identified as causing severe performance issues affecting other nets. Guidelines for determining this course of action and notification procedures can be found at http://security.berkeley.edu/blocking.html.
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• IST manages a Restricted Data repository of all systems using restricted data governed by SB 1386, FERPA, or HIPAA. Customers must register with the RDM. The IST Security team can provide security and tools to help secure machines using restricted data. See http://rdm.berkeley.edu/

3.2.3 Backup and Recovery

• IST can provide secure backup through the UCBackup service. The service uses IBM's Tivoli Storage Manager (TSM). The TSM client can optionally enable a feature to encrypt the data stream between the client and backup server.

• The UCBackup service performs daily incremental backups (after initial full backup). Backups are retained for up to five of the most recently modified versions of files, so that older versions can be restored. Deleted files can be recovered up to 30 days after deletion (grace period).

• IST maintains off-site storage containing updated copies of all backed-up files for added protection.

A detailed description of the UCBackup service is available at http://ist.berkeley.edu/ucbackup/.

3.3 Customer Responsibilities

Customer responsibilities and/or requirements in support of this Agreement include:

• All customers colocating equipment in the Data Center are required to place the equipment behind an IST-provisioned firewall.
• Availability of customer representative(s) when resolving a service-related incident or request.
• Communicate specific service availability requirements.
• Customer agrees to coordinate with IST any placing of new, or relocation of existing, equipment.
• Customer agrees to orient equipment in a manner that complies with the hot aisle/cold aisle airflow plan for the given location. IST will work with the Customer to ensure compliance.
• Customer complies with Data Center policy for controlled access; only pre-authorized users are granted access. Cardkey access is not to be shared or transferred.
• Customer ensures delivery of equipment to the Data Center.
• Customer is responsible for maintaining the encryption key password for UCBackup if UCBackup services have been purchased. If you lose the password, your encrypted data cannot be recovered. Be sure to keep a copy of the password in a location different from the server being backed up.
• Customer is responsible for managing and troubleshooting all user-installed servers and equipment (i.e., end devices).
• Customer is responsible for paying for all costs and expenses associated with all devices and peripherals, software, maintenance and associated vendor relations.
• Customer may not 'lease' this space to other customers.
• Customer must ensure that equipment meets established industry electrical, thermo, and magnetic standards. IST will request removal of any equipment out of compliance with established standards.
• Customer pays for network drop, rack space, firewall context, and (if requested) backup service.
• Customer provides and ensures that system and security contact information is kept up-to-date.
• Customer provides asset tracking of customer-owned equipment.
• Customer provides rack-mount kits for equipment.
• Customer subscribes to (majordomo list) ucb-net-announce@lists.berkeley.edu for UCB network-related announcements (e.g., new services, upgrade, changes, outages).
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- Customer uses IST-supplied cables.
- Customer will only use rack space allocated to customer.
- Customers placed on their own subnet are responsible for administering the configuration of the virtual firewall and its rule sets.
- Designated department billing contact.
- Maintain current hardware warranties and software license agreements.
- Prompt payment or provisioning of appropriate chartstring.
- Submit service requests through appropriate trouble ticketing system, contact telephone numbers for new services, or technical support.

3.3.1 System Management and Security

- Customer is responsible for all hardware and software maintenance, systems administration, and monitoring of colocated equipment.
- Customer is responsible for managing the configuration and rule sets of the hardware firewall service module if their equipment is placed on a dedicated subnet in the Data Center.
- Customer is responsible for staying in compliance with Campus Minimum Security Standards (http://security.berkeley.edu/MinStds/index.html), and IT Use Policy (http://technology.berkeley.edu/policy/).
- Customer is responsible for registering servers using restricted data in the Restricted Data Management repository (http://rdm.berkeley.edu/).
- Customer is responsible for investigating any reports of potential security vulnerabilities involving customer's equipment, and, if necessary, removing the offending device from the network. Security violations will escalate as appropriate. If necessary, IST may need to shut down connection to the server until customer is able to verify that the system has been re-secured.

4 Data Center Colocation Contact Information

There are three methods of contacting Data Center Colocation to initiate services:

4.1 Email Technical Account Management (TAM) (tam@berkeley.edu)

4.2 Email the IST Service Desk (servicedesk@berkeley.edu)
Customers will receive an email confirmation when a Data Center Colocation provisioning request has been received.

4.3 Phone the IST Service Desk (510-642-8500)
Telephone contact is available via the IST Service Desk during normal hours of operation, 8:00 p.m. to 5:00 p.m., Monday through Friday, except holidays. Messages left after normal business hours will be processed the following business day.

5 Hours of Coverage, Implementation, Guaranteed Service Availability, Response Times & Escalation
5.1 Hours of Coverage

- The Data Center Colocation’s normal hours of operation are 6:00 a.m. to 12:00 a.m., Monday – Friday except Federal holidays, University holidays, and announced University closures. Data Center Colocation provisioning requests will be completed or scheduled within one (1) business day after receipt of notification during normal business hours. Customers may use any of the methods of contact outlined in Section 4.

- After hours, requests submitted will be processed during the next business day.

5.1.1 Implementation Scheduling

New Data Center Colocation services and capacity upgrades are scheduled during normal business hours:

- 8:00 am to 5:00 pm, Monday through Friday, except University or government holidays

5.1.2 Service Availability

Service availability defines the percentage of time this service is available, with the exception of scheduled maintenance, and within service availability hours.

- 6:00 a.m. to 12:00 a.m., Monday through Friday, excluding holidays
- 7:00 a.m. to 4:00 p.m., Weekends

5.1.3 Incident Support Hours, Response Times, and Reporting

A Data Center Colocation incident means any interruption of the normal function, or if the collocation services are severely malfunctioning. The Data Center Colocation’s incident support hours are 24 hours per day, 365 days per year.

The Data Center Colocation’s technical contacts will respond to an incident within ninety minutes (90) after receipt of notification from the Service Desk via any of the methods outlined below:

To report a Data Center Incident, please email or phone the IST Service Desk at:

- Email: servicedesk@berkeley.edu
- Telephone 510-642-8500

IST Service Desk is staffed from 8:00 AM – 5:00 PM Monday through Friday, excluding holidays. After hours support information for the IST Service Desk can be found here: [http://ucbssystems.org/after-hours-support/](http://ucbssystems.org/after-hours-support/)

5.1.4 Prioritization

The Data Center Colocation group will prioritize incoming incident requests as “urgent” priority if it meets any one of the following criteria:

- Number of departments or people affected.
- Percentage of total tasks that can no longer be performed by individuals.
- Academic and Administrative Calendar deadlines.
- Impact on the delivery of instruction.
• Lasting impact on student academic performance.
• Risk to safety, law, rule, or policy compliance.

5.1.5 **Service Requests**
A service request means a request made by a customer to the Data Center Colocation Group for a service as published in the IST Service Catalog. Service requests will be processed after receipt within one (1) business day, Monday – Friday, 8:00 a.m. to 5:00 p.m., excluding holidays. Service Request changes will be made during service request support hours.

To request *initiation of Colocation Services*, please use the following method:

• Send email to Technical Account Management (TAM) at tam@berkeley.edu

5.2 **Escalation**

5.2.2 **Service Level**
If you are not satisfied with the level of service on a request, contact Technical Account Management (“TAM”) at tam@berkeley.edu or the IST Service Desk at 510-642-8500. Escalation requests are categorized and processed as appropriate and will be responded to with the action taken.

5.3 **Information**
If you have a question about Colocation Services, please contact Technical Account Management (“TAM”) at tam@berkeley.edu, or the IST Service Desk at 510-642-8500 or servicedesk@berkeley.edu.

5.4 **Other Requests**
Requests for service features and functions not yet implemented can also be submitted via IST Service Desk at 510-642-8500 or servicedesk@berkeley.edu.

5.5 **Service Exceptions to Coverage**

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<thead>
<tr>
<th>Exceptions</th>
<th>Parameters</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Holidays</td>
<td>N/A</td>
<td>No coverage</td>
</tr>
<tr>
<td>University Holidays</td>
<td>N/A</td>
<td>No coverage</td>
</tr>
<tr>
<td>Scheduled Maintenance(s)</td>
<td>Scheduled between Data Center Colocation, Technical and Data Owner Contact</td>
<td>No coverage</td>
</tr>
</tbody>
</table>

6 **Maintenance and Service Changes**
The Change Management process within Data Center Colocation minimizes unintended service disruptions or other impacts to the Campus as a result of changes in the production environment. Data Center Colocation does this by monitoring, managing, and evaluating changes to maximize the service benefits to the customer,
while minimizing the risks involved in making those changes. Please note that some maintenance work may cause service disruptions.

All Data Center Colocation related services, maintenances, and Campus outages are published at IST System Status page (http://systemstatus.berkeley.edu).

There are three categories of service changes:

**Planned Maintenance**: Planned service maintenance is approved work that is planned and scheduled prior to the change. Data Center Colocation will communicate (as needed) to the appropriate department contacts prior to the scheduled change. Whenever possible, scheduled maintenance is planned during off-hours on weekends, and performed as necessary in the quickest and most efficient manner to ensure restoration of affected services. Planning for outages includes careful reference to the academic calendar to ensure the mission of the University is not affected. No planned network maintenance will occur during scheduled finals weeks, the first week of each semester, or at other critical periods. Regularly schedule maintenance is performed 6:00 a.m. – 12:00 p.m. every Sunday. Email notification will be sent with the date and time of the planned maintenance window, scope of impact, and potential effects of the outage to ucb-net-announce@lists.berkeley.edu and to campus parties potentially affected by the event.

**UCB ISP, Campus Backbone Media or Core Routers**

**Outage duration: less than 15 minutes**
- Required completion: before 7:00 AM, 7 days per week
- Minimum notification: 48 Hours (not counting weekend hours)

**Outage duration: greater than 15 minutes**
- Required completion: before 7:00 AM, 7 days per week
- Minimum notification: 72 Hours (not counting weekend hours)

**UCB subnet(s)**

**Outage elapsed time: less than 15 minutes**
- Required completion: before 7:00 AM, weekdays or as negotiated with departments for weekends
- Minimum notification: 24 Hours (not counting weekend hours)

**Outage elapsed time: greater than 15 minutes**
- Required completion: before 7:00 AM, weekdays or as negotiated with departments for weekends
- Minimum notification: 36 Hours (not counting weekend hours)

**Unplanned Maintenance**: Unplanned production maintenance is priority work that is unplanned due to an urgent repair, patch or update to prevent failure. Unplanned production maintenance will be given priority (and communicated immediately). Critical patch notification is determined by the nature of the problem and may be scheduled in less than one day. As such, critical security or break-fix patches are applied as needed. If possible, Data Center Colocation will email the Technical and Data Owner contacts as soon as possible to coordinate the application of these patches.

**Emergency Service Change**: An emergency service change is defined as a service failure that affects the entire campus or significant number of users that requires immediate repair, and is performed as necessary and in the quickest and most efficient manner to ensure restoration of affected service. All Emergency Service Changes are communicated to the appropriate Data Center Colocation contacts to determine necessary communication steps. An email notification describing the problem, scope of impact, and resolution will be sent to ucb-net-announce@
lists.berkeley.edu and to other campus parties affected by the event as appropriate. Emergency service announcements are also communicated usually the day of the service failure. Off-hours service failures are communicated the following business day.

7 Rates

7.1 Rate Process
Recharge rates are calculated by IST to achieve cost recovery and approved by the Campus Recharge Committee based on campus recharge policies (http://controller.berkeley.edu/recharge/Policies/Rechargepolicy.pdf)

7.2 Charges
Customers will be billed monthly.

Customers may terminate the service at any time without charge with 30 days advance notice. No refunds will be issued for unused Data Center Colocation services.

Any billing questions should be directed to istbill@berkeley.edu.

8 Reviewing and Reporting
This SLA covers the period from July 1, 2010 to June 30, 2011, and will be reviewed and revised at the end of this period.

8.1 SLA Reviews
This Agreement will be reviewed annually or as otherwise needed.

Technical Account Management is responsible for facilitating annual reviews of this document. Data Center Colocation maintains responsibility for the content of this document, and may amend it as required. All changes are communicated to all affected parties. Technical Account Management will incorporate all subsequent revisions and obtain mutual agreements / approvals as required.

This Agreement will be posted to the following location and made accessible to all customers:

Document Location: Technical Account Management will maintain the central repository for all Service Level Agreements. All Service Level Agreements can also be accessed for individual Data Center Colocation in the IST Service Catalog.

9 Signatures

DEPARTMENT authorization

<table>
<thead>
<tr>
<th>Signature:</th>
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Date:
### Data Center Colocation - SLA

<table>
<thead>
<tr>
<th>Name:</th>
<th>Steve Aguirre</th>
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<tbody>
<tr>
<td>Title:</td>
<td>Data Center Operations, Infrastructure Services</td>
</tr>
<tr>
<td>Department:</td>
<td>IST-IS Network and Data Center Operations</td>
</tr>
<tr>
<td>Phone:</td>
<td>510-642-5378</td>
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